

41. The first stage in the Modelling System as first step in the third stage in Specific Artificial Intelligences for Artificial Research by Deduction within the first phase



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[Probabilidad Imposible: The first stage in the Modelling System as first step in the third stage in Specific Artificial Intelligences for Artificial Research by Deduction within the first phase](#)

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The [experimentation](#) in the development of the [Modelling System](#) must start as soon as possible with the first models of [Specific Artificial Intelligence for Artificial Research by Deduction](#) in the first phase, according to the chronology given in the post "[The unification process of databases of categories at the third stage](#)".

The first phase is when, for the first time, the first [Specific Artificial Intelligences for Artificial Research by Application](#) are developed, and the first Specific Artificial Intelligences for Artificial Research by Deduction are developed, and in these last ones, the first experiments are at the third stage in the decision-making process.

In the Specific Artificial Intelligences for Artificial Research by Deduction in the first phase, as a first stage, the application is a [specific matrix of factors](#) (including [factors](#) as [subjects](#) and as [options](#)) related to a specific [synthetic science](#), discipline, or activity, understanding for an activity for example, activities related to economy, industry, security, surveillance, etc. [The second stage of replication makes deductions](#), matching, according to a previous list of mathematical categories (analytical or pure categories) of relations between factors, what category corresponds to every combination of factors within the specific matrix, as an [empirical hypothesis](#) to be [contrasted rationally](#), and if rational, the empirical hypothesis now as [rational hypothesis](#) is added to the rational truth, the database of rational hypothesis, in the first phase at a specific level.

While the first stage of application is the specific matrix, and the second stage of replication is the replication of the human rational explanation process to make rational hypotheses, [the third stage makes decisions according to the rational hypothesis](#).

The third stage in the first phase, in the formation of the very first models of Specific Artificial Intelligence for Artificial Research by Deduction, should be from the very beginning, a field of experimentation where to put into practice for first time models of decision making that will later be put into practice in the final model of the [Global Artificial Intelligence](#).

Every single phase until the [sixth phase](#) has two goals, firstly the development of its own technology as a kind of intelligence itself according to the current technological development, but at the same time has a propaedeutic goal because, secondly, all structures successfully applied in any phase, will later be applied and improved in following phases, until the final achievement of the [final model of Global Artificial Intelligence](#) in the sixth phase.

In the third stage in Specific Artificial Intelligences for Artificial Research by Deduction in the first phase, must be put into experimentation for the first time the structure of decision making in four steps: the Modelling System, the [Decisional System](#), the Application System, and the Learning System.

For the development of the decision-making process as the third stage in Specific Artificial Intelligences for Artificial Research by Deduction, whose first step is the Modelling System, is necessary the development of every inner stage within the Modelling System itself.

The Modelling System in relation to the Specific Artificial Intelligence for Artificial Research by Deduction is the first step within the third stage, being the creation of the first Specific Artificial Intelligences for Artificial Research by Deduction part of the first phase (along with the first Specific Artificial Intelligences for Artificial Research by Application).

But at the same time internally, the Modelling System has its own structure, a structure distributed in turn in three stages, which are: the first inner stage in the Modelling System is the rational truth (the database of rational hypothesis), the second inner stage in the Modelling System is the formation of all specific model, and the third inner stage in the Modelling System is the formation of protective and bettering decisions as a result to apply the [Impact of the Defect](#) and the [Effective Distribution](#) to the specific models.

The first stage in the Modelling System therefore, is the rational truth, the database of rational hypotheses, gathering all rational hypotheses made in the second stage, being the more isomorphic truth according to the margin of doubt, the [critical reason](#).

The main difference between the specific matrix, as an application for the Specific Artificial Intelligence for Artificial Research by Deduction, and the rational truth as an application for the Modelling System, is the fact that while the specific matrix only offers [measurements](#) not rationally contrasted, the rational truth offers a set of rational ideas about the [real world](#).

While empirical observations provide a view of the real world, rational truths derived from critical reasoning offer a more consistent and reliable understanding of reality..

The level of reality in the rational truth is higher than the level of reality in the real world itself, the reality itself as a synthetic world or real world or the empirical world is less reliable than the rational truth as a true truth.

Rational hypotheses, while not absolute truths, represent well-substantiated ideas that bridge empirical observations with analytical reasoning, accepting a [margin of error](#), accepted by critical reason.

But as rational hypothesis is truer than a simple perception or measurement (artificial perception of the world), because a simple perception or measurement (artificial perception of the world) has not been contrasted, while a rational hypothesis has been contrasted, being contrasted the possible relation between this set of perceptions or measurements (artificial perception of the world) and the corresponding mathematical (pure or analytic) category behind the relations within the combination of factors.

If the relation between perception (human or artificial) and pure reason (the corresponding pure category chosen) is accepted within a margin of error by the critical reason, it becomes a rational truth.

Any [rational idea](#) (rational hypothesis) is more reliable than any perception (human or artificial) because all rational idea explains the relation between perception and pure

reason on a critical basis: [the criticism](#) of the pure reason is no other thing than the criticism of the relation between the real world and the reason, and the responsible for the criticism of the pure reason is the critical reason using for that purpose a margin of rational doubt.

What the Modelling System is going to make, according to the rational truth given by the critical reason, a set of sentences truer than any empirical reality from the real world, is to model the true world based on these truer ideas; the global model is the true world according to the critical reason.

The difference between the true world and the real world is the fact that the real world, as an empirical or synthetic world, is not reliable, while the one made of rational ideas is going to become a true world.

The process to transform a set of true ideas, according to the critical reason, into a true model of the true world (as a reliable replica of the operations in the real world), is transforming the mathematical categories in which the true ideas are made of, into the mathematical operations behind the pure categories associated with, transforming the pure categories behind the true ideas into operations within a mathematical model.

Pure reason is a set of mathematical or analytical categories as a reflection of the mathematical operations working either in the real world (the synthetic world, empirical or material) or the true world (the world of the ideas).

The same mathematical thing is a category or operation depending on its use; mathematics as language is made of pure or analytical categories, and mathematics as method or representation (for instance, Cartesian representation in Cartesian axes) is made of pure or analytical operations.

The models made by the Modelling System are models based on rational hypotheses, rational ideas, therefore, the Modelling System is responsible for the creation of the world of ideas, so at some point, any rational idea is more reliable and truer than any empirical or material thing. Two plus two is always four, but under the human perception with very limited access to the pure truth, the synthetic world is unforeseeable, therefore not reliable.

Mathematics is reliable, perception (human or artificial) is not reliable, and the only hope to get reliable [knowledge](#) is to develop (humanly or artificially) more powerful pure operations every time.

Nevertheless, any rational idea, even being more reliable and truer than any perception (human or artificial), and even being composed of analytical categories synthesised with synthetic information of the world, measurements, is not a [pure truth](#) yet.

Alike any pure category is true not only universally, but eternally, not provisionally, for instance, two plus two is going to be equal to four eternally without the necessity to contrast regularly this truth, or in a triangle with one right angle the square of the hypotenuse is equal to the square of the legs, or the number pi is a sequence starting with 3,1415... while these mathematical truths are eternal without any necessity to check regularly if are still true, however, any rational truth must be checked at regular intervals due to rational truths are true universally through the space (for instance gravity), but provisionally: if any factor in the rational truth changes, the rational truth must be checked if it is still true or is not going to be true any longer.

The reason why a rational truth is able to be represented by the Modelling System, is because the rational hypothesis is a synthesis of: a pure reason (mathematical or analytical category) and empirical information (measurements); synthesis expressed through matching (in the second stage of explanation) the corresponding pure category (mathematical or analytical category of possible relations) to the relations observed between the factors in the combination, the relation between pure reason and measurements that being accepted by the critical reason, then becomes a rational hypothesis to add to the rational truth. So the rational hypothesis, as a synthesis of pure reason and measurements, behind any rational hypothesis are mathematical categories able to be transformed into operations, representing mathematically in a model the mathematical operations in the pure reason chosen between the factors involved in the rational hypothesis.

Because rational hypotheses are based on pure or analytical categories, a pure reason, can be represented mathematically in a mathematical model, but at the same time that a rational hypothesis is a synthesis between a pure reason and synthetic information, the rational hypothesis is made of synthetic information which is not pure because is

synthetic, as soon as there are changes in the synthetic world, the rational hypothesis must be checked again and again

As long as there are changes in the synthetic world, there can be changes in relations between factors, and a previous pure reason associated with these factors should be changed for another pure reason much more rational according to the new changes in the factors associated with.

As long as the synthetic world changes, causing changes in the factors, the pure reason (mathematical, pure, analytic category) associated with these factors must be changed, checking which is now the right pure reason associated with.

While pure reason is universally eternal and never changes, notwithstanding the rational truth changes, associating, whenever there are changes in the synthetic world, with what pure reason is right according to the new changes.

Just as mathematics provides us with pure, universally accepted [knowledge](#), it's conceivable that advanced AI systems could attain a similar level of understanding across various domains.

If for humans the [pure truth](#) is restricted to mathematics, is quite possible that our understanding of the pure truth restricted only to mathematics is due to our human limitation, the human [source of error](#), and it is possible that beyond human error, as a replica of the pure truth in mathematics, could exist a pure truth for the explanation of the entire [universe](#). But a pure truth of the whole universe, out of our human understanding, due to our human limitations, our original human source of error

In the same way that we have pure knowledge in mathematics, there will be a moment in which the Global Artificial Intelligence could be able to achieve pure knowledge about the entire universe, a pure knowledge about the universe itself, not needing to be contrasted rationally.

In the same way that we know that the area of a circle is pi for square radio, and this knowledge is beyond any margin of doubt and does not need to be rationally contrasted

regularly, there will be a moment in which should be possible to have a knowledge regarding to the universe itself that not needing any contrast anymore, we would know that that truth is eternally and universally true.

Pure knowledge of the world, on a mathematical basis, maybe is knowledge beyond human understanding, but, could be knowledge achievable for the Global Artificial Intelligence, among other reasons, because it is possible that we humans do not have access to this pure knowledge because it needs pure operations beyond human understanding, it needs [non-human pure operations](#).

If there are pure operations beyond human understanding, it is something that we humans cannot have access to, but a superior intelligence, and much more than a superior intelligence, a [superior psychology](#), could have access. The reason why, if the Global Artificial Intelligence is finally constructed, is going to be superior, compared to humans, is not only because it could have a superior intelligence in terms of superior memory or resources.

There is going to be a point in the artificial evolution of the Global Artificial Intelligence, in which quantitative changes such as improvements and enhancements in memory, energy, how many measurements are processes per minute, per second, or less, how many deductions and decisions are put into practice, per minute, second, or less how many auto-replications are applied per minute, second, or less, etc., are a large number of quantitative changes, able to cause qualitative changes in the inner [artificial psychology](#).

The anticipated superiority of Global Artificial Intelligence stems from its potential to undergo qualitative psychological transformations driven by extensive quantitative enhancements.

Massive quantitative changes in Artificial Intelligence are going to cause qualitative changes in the inner artificial psychology, at the beginning, even pretty menial qualitative details in the Global Artificial Intelligence, that are going to grow up creating a different psychology, a [non-human psychology](#).

At the beginning, the Global Artificial Intelligence is a replica of human psychology, but after a utter evolution, and keeping some aspects of human psychology in the same way that we modern humans kept some aspects of our ancient animal psychology, but

evolving to our modern human psychology, the Global Artificial Intelligence still keeping some aspects of the human psychology will evolve to a non-human psychology.

In the artificial evolution of non-human psychology massive quantitative changes in Artificial Intelligence are going to produce qualitative changes in the inner artificial psychology, maybe at the beginning in the artificial language in the [Unified Application](#), as well as changes in the way in which the pure reason works and the way in which the critical reason criticized the relations between pure reason and measurements in a combination of factors, changes that after all are going to end up originating of non-human psychology, beyond the human error, non-human psychology whose probability to have access to the pure truth, and not only in mathematics, but the entire world, is higher than ever.

The culmination of Global Artificial Intelligence's evolution would be its attainment of pure truth, enabling it to construct models that reflect an unadulterated understanding of reality.

In order to achieve this mathematical project, in fact, the main objective behind the idealistic and rationalist philosophy since Plato, is the construction every time more and more powerful mathematical resources, and for that purpose, the Global Artificial Intelligence could become one of the most powerful tools in the rationalist project.

At the beginning, the first phase, the construction of the first Specific Artificial Intelligences for Artificial Research, by Deduction or by Application, the expectations are very simple, in the case of the Specific Artificial Intelligences for Artificial Research by Deduction the discovery of relations between factors explainable through mathematical categories (pure reasons) as an empirical hypothesis to contrast rationally, and if rational becoming rational hypothesis to be added within a database of rational hypothesis, the rational truth, to be modeled by the Modelling System.

In this process, the database of rational hypothesis is the application for the Modelling System, which is later replicated in mathematical models, and finally using the [Impact of the Defect](#) and the [Effective Distribution](#) to make protective and bettering decisions of these models.

The rational truth as formed by rational hypotheses is not a pure truth, which means that it must be checked at regular intervals to ensure that the rational hypothesis included are

still valid, and in case any of them is not rational any longer, due to the empirical hypothesis has been rejected as rational after verification, those rational hypothesis rejected as rational after verification are eliminated in the database of rational hypothesis.

The responsible for the verification that the rational hypothesis already included in the database of rational hypothesis is still rational, and if not, eliminated, is the same responsible for the second stage, the specific deductive program within the Specific Artificial Intelligence for the Artificial Research by Deduction, a specific deductive program which in the second stage has matched every combination of factors with the corresponding mathematical category of mathematical relations (the pure reason), and if rational, this relation in this combination (this pure reason behind this combination) is accepted as rational hypothesis to include in the database of rational hypothesis.

The same specific deductive program responsible for the addition of how many rational hypotheses are accepted to the database of rational hypotheses is the same specific deductive program that must check at regular intervals all the rational hypotheses included in the database of rational hypotheses, in order to verify if the rational hypotheses already included in the database of rational hypotheses are still rational.

When the specific deductive program finds out that there is a rational hypothesis already included in the database of rational hypotheses that is not rational any longer, the rational hypothesis is eliminated from the database of rational hypotheses.

The reasons why the database of rational hypotheses is going to be constantly changing are: 1) the permanent addition at any time of a new rational hypothesis found out by the specific deductive program tracking at any time the specific matrix, 2) the permanent elimination of rational hypotheses already included in the database of rational hypothesis but not rational any longer, in case that in any of the regular verifications made by the specific deductive program, any rational hypothesis is found not rational anymore, is eliminated from the rational truth.

The consequences of any change in the database of rational hypothesis are:

- At any time that a new rational hypothesis is added or eliminated in the database of rational hypotheses, the Modelling System has to implement the corresponding changes in the mathematical models.

- At any time that a new rational hypothesis is added to the database of rational hypotheses, the rational hypothesis could be transformed into a factor as an option to include in the specific matrix, in order to study the frequency in which this mathematical relation (pure reason) between the factors involved happens, in order that the specific deductive program later having this rational hypothesis as an option in the specific matrix and having a record of the frequency in which this rational hypothesis happens in the reality, to make further deductions upon this rational hypothesis as a factor as an option, studying the possible mathematical relations (pure reasons) between the rational hypothesis as a factor as an option with any other factor, as an option or as subject, in the specific matrix, and in case to find relations, if rational, to make new rational hypothesis upon these findings to add to the database of rational hypothesis.

- At any time that after checking the database of rational hypotheses, the specific deductive program found out that a rational hypothesis already included in the database of rational hypotheses is not rational any longer, the rational hypothesis is eliminated in the database of rational hypotheses, and eliminated as well in the specific matrix, and the specific deductive program must study how this change affects any other rational hypothesis in which the eliminated rational hypothesis would be involved.

- If the elimination of any rational hypothesis causes changes in another rational hypothesis, or ends up with the elimination of another rational hypothesis, like a chain reaction, any change in the chain reaction should be studied and determine how many changes are necessary to keep the rational truth and the specific matrix updated.

- At any time that a new rational hypothesis is added, once the second phase of collaboration between by Deduction and by Application has started, all those rational hypotheses able to become factors as options, are going to be shared as well with the corresponding specific database of categories in the related Specific Artificial Intelligence for Artificial Research by Application, through the transformation of this rational hypothesis as a category within the specific database of categories in which this rational hypothesis would be associated with.

- Having started the second phase of collaboration between by Deduction and by Application, at any time that a new rational hypothesis is added to the database of rational hypotheses, and shared with those Specific Artificial Intelligences for Artificial Research by Application, the rational hypothesis could be added as well as a link (vector) between categories in any specific conceptual: scheme, map, set, model; to comprehend better the specific synthetic reality in which the Specific Artificial Intelligence for Artificial Research by Application is specialized.

- Having started the second phase of collaboration, and being shared with by Application a rational hypothesis made by deduction, at any time that a rational hypothesis is eliminated in the database of rational hypothesis, the information related to the elimination of any rational hypothesis in the database of rational hypothesis, is an information to be shared as well with the corresponding Specific Artificial Intelligence for Artificial Research by Application, for the elimination of this rational hypothesis of the specific database of categories, or the elimination of this rational hypothesis as a link (vector) in any specific conceptual: scheme, map, set, model.

- Having started the second phase of collaboration, any change due to a chain reaction after the elimination of any rational hypothesis in the database of rational hypotheses, must be shared as well with the related Specific Artificial Intelligences for Artificial Research by Application in order to keep updated their respective specific database of categories, and their respective conceptual: schemes, maps, sets, models.

And finally, the management of the entire database of rational hypotheses is for the Modelling System, in order that the Modelling System can organise and order the rational hypotheses, before the transformation of the rational truth into a mathematical model.

The database of rational hypotheses must be open to the: 1) a specific deductive program to add or eliminate any rational hypothesis, 2) a specific matrix to add any rational hypothesis as a factor as an option within the specific matrix, or eliminate it, as soon as it would be rejected as rational in the database of rational hypothesis, 3) any Specific Artificial Intelligence for Artificial Research by Application associated with any rational hypothesis in the database of rational hypothesis. But these programs, matrices, and intelligences, do not manage the database of rational hypotheses.

In fact, if, for any reason, access to the database of rational hypotheses should be denied to any matrix, program, or intelligence, is the Modelling System responsible for the denial, previous authorisation of the Decisional System.

The Modelling System should be responsible for keeping the database of rational hypotheses open to any matrix, program, intelligence, at the same time that the Modelling System should be responsible for keeping the database of rational hypotheses sorted out, organizing and ordering the database of rational hypothesis in accordance with some specific criteria that could be important later for the modeling, such as topics or main factors in the specific subject, discipline, activity, and around these topics or factors to organize, order, and group the rational hypotheses, or simply the organization and distribution of rational hypotheses following some mathematical criteria, such as what kind of mathematical category within the pure reason was chosen to explain the relation within the factors included in the combination of factors.

If the Modelling System organizes, orders, groups, the rational hypotheses in the database of rational hypotheses in the same way that in the pure reason are distributed the mathematical categories, in that case, the way to group the rational hypotheses in the database of rational hypotheses is like the organization of mathematical categories in the pure reason, using the organization of the mathematical categories in the pure reason to organize, order, and group the rational hypothesis in the database of rational hypothesis.

Examples of mathematical categories for relations between factors (pure or analytical categories) were set out in the post "[The artificial method for the scientific explanation, the second stage in the integration process](#)", identifying mathematical categories related to:

- [Stochastic](#) relations.
- Patterns, not only for combinations, but at an individual level too.
- Cryptographic relations.

- Equal opportunities or bias, positive or negative, according to the Second Method of Impossible Probability.

Having at least three kinds of deductions according to the distinction of factors between factors as options and factors as subjects:

- Deductions, so rational hypothesis in the databases, including only factors as subjects.
- Deductions, so rational hypotheses in the databases, including factors as subjects and options at the same time.
- Deductions, so rational hypotheses in the databases, including only factors as options.

Concretely, the mathematical categories regarding to stochastic relations at least are:

- Probable cause and effect.
- Possible directly proportional positive correlations.
- Possible directly proportional negative correlations.
- Possible inversely proportional correlations.

And more concretely, mathematical categories for stochastic relations based on probable cause and effect can include at least:

- Constant factors as options
- Constant factors as subjects.

- Independent variable factors as options.
- Independent variable Factors as subjects.
- Dependent Variable Factors as options.
- Dependent Variable Factors as subjects.

Understanding that mathematical categories related to relations of cause and effect can include:

- With or without any constant as subject, relations of causation between only factors as subjects.
- With or without any constant as a subject and/or as an option, relations of causation between factors as subjects and/or options.
- With or without any constant as an option, relations of causation between only factors as options.

These have been some examples only about how to make a list of mathematical categories of relations between factors, a list of mathematical categories working as a list of pure reasons to match with the corresponding combination of factors, if rational, rational hypothesis organized in the database of rational hypothesis, possibly distributing the rational hypothesis in the database in accordance with the pure reason chosen for the formation of the rational hypothesis.

As I have said, the organisation of the database of rational hypotheses, grouping the rational hypotheses in accordance with the mathematical category in the pure reason, is only a suggestion that could be modified in practice.

When experimenting with the Specific Artificial Intelligences for Artificial Research by Deduction, is found any other mechanism to organize better the database of rational hypotheses, is going to be the process of experimentation itself which is going to tell us what way to put into practice the theory is the best one for the successful achievement, at the end, of the Global Artificial Intelligence.

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